

NEWSLINE

Published weekly for employees of Lawrence Livermore National Laboratory

Friday, February 8, 2002

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Lab efforts a BASIS for security

Technology will be used at 2002 Winter Olympics

The results of the work, by researchers at Livermore and Los Alamos national laboratories, will form part of the security network at the 2002 Winter Olympics in Salt Lake City.

"The events of Sept. 11 have demonstrated the importance of taking the bio-threat seriously," said Gen. John Gordon, administrator of the National Nuclear Security Administration. "While our people have been concerned for years, and we have worked to be prepared, these events have heightened our resolve."

Since 1999, researchers at Livermore and Los Alamos have worked to develop a system capable of detecting airborne biological incidents for special events, such as political conventions, dignitary visits and major sporting events.

The system, called the Biological Aerosol Sentry and Information System, or BASIS, has been developed under the Chemical and Biological National Security Program of the National Nuclear Security Administration by Livermore and Los Alamos scientists.

BASIS consists of a network of sampling units, similar to those used by the Environmental Protection Agency to monitor air quality, to collect and check aerosols. Filters capture aerosols and are then collected several times a day for analysis.

At the heart of BASIS is a transportable field laboratory where collected samples are analyzed using the most reliable and sensitive identification techniques available. The samples are analyzed using DNA-based techniques that have been validated by the Centers for Disease Control and Prevention.

BASIS reduces the time for detecting a bio-agent release from days or weeks to less than a day, allowing public health officials to have much more rapid warning, said



Researchers from Los Alamos and Lawrence Livermore labs collaborated on BASIS.

Livermore project manager Dennis Imbro. "The early notice could mean the difference between life and death for people in any contaminated area," he said.

Public health procedures have traditionally relied on observation and surveillance of symptoms displayed by infected individuals for detecting and tracking outbreaks of disease such as those that might result from a biological attack.

Wiley Davidson, Imbro's fellow project leader at Los Alamos, emphasized that the BASIS project

See BASIS, page 8

FY2003 budget request calls for stronger foundation to ensure energy security

Energy Secretary Spencer Abraham released the DOE/NNSA Fiscal Year 2003 Budget request to Congress Monday, calling the plan a blueprint to "build a stronger foundation for energy security in the 21st century."

The budget request of \$21.9 billion will deliver concrete benefits, fulfilling the Bush administration's commitment to ensuring national security, energy security, energy efficiency, environmental quality, and science and technology. Additionally, the secretary discussed the department's evolution from an agency focused on Cold War missions to a well-managed, accountable department that is changing the way it does business in the 21st century.

Following the president's call in the State of the Union address to "do what is necessary to ensure our nation's security," the department requested \$8 billion for the National Nuclear Security Administration (NNSA), which directs additional funding to nuclear nonproliferation and stockpile stewardship programs.

Jeffrey Fernandez, LLNL budget officer, said growth in the proposed DOE/NNSA budget in national security programs is "very positive" for the Laboratory. "The budget request presented by Secretary Abraham reflects post-Sept. 11 national security priorities in Laboratory mission areas," Fernandez

See BUDGET, page 7

Lab looks into expansion of biodetection capabilities

The Laboratory is exploring the possibility of adding new facilities to expand its role in the area of biological science and biodetection.

"Experiments on a wider array of microorganisms will not only help the Lab further develop much-needed biodetection capabilities, but learn more about emerging diseases," said Page Stoutland, R Division deputy director. Stoutland is leading a cross-Laboratory team on the project.

See BIODETECTION, page 8

Duo sets their sights on Olympic biathlon

By Ali Carrigan

NEWSLINE STAFF WRITER

They won't be winning any medals, but if you watch closely, you might see Lab employees Paul McCandless and Jill Farrell at the 2002 Winter Olympic Games in Salt Lake City.

McCandless, a senior engineering associate in the New Technologies and Engineering Division, and his wife Farrell, who works in Plant Engineering, have headed to Salt Lake City to help officiate the biathlon events at the 2002 Winter Olympics.

The biathlon combines skiing and shooting —

male and female athletes ski distances ranging from 10 to 20 kilometers and stop to shoot five rounds from .22 caliber rifles two or four times per race. The targets are 50 meters away. The first biathlon competition was between two Norwegian border guard companies in 1767, and the sport was added to the Olympic program in 1960.

"It's really quite a challenge," McCandless said. "You're skiing for miles, and then you have to calm your heart fast enough to hit a target 50 meters away, sometimes standing and sometimes prone."

See BIATHLON, page 8



Paul McCandless (left) and his wife Jill Farrell will officiate at the 2002 Winter Olympic biathlon.



'Brain attacks' at Saturday series

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1957: Testing goes underground

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Linac closer to going online

— Page 5



LAB COMMUNITY NEWS

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Friday
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Today is the last day to place a pre-order for the Association of Black Laboratory Employees' annual **Valentine's Day Scholarship fund-raiser**. For a \$12 donation, you'll receive a plush stuffed animal; one 18-inch mylar balloon and one See's truffle in a decorative box. Contact Pearline Holton, holton2@llnl.gov; Gennetta Byrd, byrd2@llnl.gov; or Lisa Rashidi, rashidi2@llnl.gov to place orders. Pickup will be on Thursday, Feb. 14 in Bldg. 571, room 2242, between 11:30 a.m. and 1:30 p.m. Payment can be made the time you pick up your order.

Saturday
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There will be a **scheduled power outage** on Saturday from 7 a.m. to 3:30 p.m. in the following locations: Bldgs. 254, 271 and 274 and trailers 2554, 2684, 2701, 2777 and 2787. There will be a scheduled power outage on Sunday from 7 a.m. to 3:30 p.m. in the following locations: Bldgs. 131 and 691; trailers 4104, 4177, 4184, 6925, 6926, and 6928. Contact: Mark Cardoza, 3-0490.

Friday
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Applications are due for the Lab's **Student Employee Graduate Research Fellowship program**. Students must have passed their preliminary exams, and be ready to start thesis research at LLNL. Information for potential Lab mentors, campus thesis advisors and students can be found at <http://www.llnl.gov/urp/Sefellowship/>. Contact: Harry Radousky, 2-4478.

A representative from **California Casualty Insurance** will be in the Benefits Office. Appointments are required and may be scheduled by calling 2-9955. California Casualty offers individual rates to Lab employees by payroll deduction for auto and homeowner/renter insurance. As with any employee-paid insurance coverage, employees are encouraged to comparison shop.

Up
Coming

The Chinese American Network Group will celebrate the Year of the Horse at its **annual Chinese New Year banquet lunch** Thursday, Feb. 28, 11:30 a.m. to 1 p.m. at the Willow Tree Restaurant in Dublin. Tickets are \$15 per person; tickets must be purchased by Feb. 22 due to limited seating. Tickets are available from Eric Chow (2-0552 or <mailto:chow6@llnl.gov>).

Space is still available for the two-day **Comprehensive Retirement Planning Workshop**, March 6 - 7, in the Bldg. 123 auditorium. This workshop, offered by the Benefits Office, is designed especially for those within 10 years of retirement. To register on-line, go the Website at <http://www.llnl.gov/jobs/benefits>. The cost for the workshop is \$95. Employees may register their spouse to accompany them at no additional cost by calling the Benefits Office at 2-9955.

Saturday talk examines 'brain attacks'

Lab scientist John Marion and Tracy High School biology teacher Kirk Brown will present "Brain Attack — New Technologies for Treating Strokes," on Saturday, Feb. 9, at 9:30 a.m. in the Lab's Bldg. 123 auditorium.

In this Science on Saturday presentation, students will learn about blood flow to the brain, types of strokes, aneurysms (bulging artery) and hematomas (blood or fluid pocket inside the skull). They'll also learn about current treatments for these conditions and some new technologies from LLNL's Medical Technology Program. Two LLNL stroke technologies are in clinical trials, one for unclogging blocked arteries in the brain and one for treating aneurysms.

Most importantly, students will learn the symptoms of stroke, what to do if someone is having a stroke and why a stroke should be treated as a brain



John Marion

attack: a time critical emergency.

LLNL's Science on Saturday program is a five-week series of free 90-minute talks geared toward middle and senior high school students. The free lectures, which cover topics ranging from the study of volcanoes to state-of-the-art robotics, will be offered every Saturday through March 2, from 9:30-11:15 a.m. All of the talks are in the Bldg. 123 auditorium and are open to students, their parents or guardians, and teachers.

Registration is at the door and seating is available on a first-come, first-served basis, with priority given to students. All Science on Saturday visitors must enter the Laboratory through the southwest entrance on East Avenue.

For more information, check the Website at <http://education.llnl.gov/sos> or e-mail the Lab's Science and Technology Education Program at education@llnl.gov.

Forum will outline model workplace for women scientists

A forum devoted to framing a "model workplace" for women scientists and engineers will be held during the spring congressional recess in Albuquerque, N.M.

To prepare for the forum, several brown bag lunches will be held at the Lab for employees to offer input for discussion topics in Albuquerque. The brown-bag sessions will be held Tuesday, Feb. 12, 11:30 a.m.-1 p.m., in the Bldg. 361 auditorium; Thursday, Feb. 14, 11:30 a.m.-1 p.m., in the Bldg. 361 auditorium; and Tuesday, Feb. 19, noon-1:30 p.m., in Bldg. 319, room 205.

The forum is an offshoot of "Strategies Within — Forging New Realities for Women in Science, Engineering and Technology," a one-day symposium in 1999 that brought together 100 women scientists

and engineers from national laboratories, industry, and universities, principally from the San Francisco Bay Area.

The final report from this forum provided key input to the Commission on the Advancement of Women and Minorities in Science, Engineering, and Technology regarding issues that are important to women working in scientific careers.

The second forum, which will be open to participants from Livermore, Los Alamos and Sandia national laboratories, will produce a report outlining the key elements of our model workplace to be presented to the senior management at the laboratories as well as management at the NNSA and DOE.

For more information, contact Dorothy Bishop at 2-2267 or bishop2@llnl.gov.

IN MEMORIAM

Robert Goeckermann

Robert Goeckermann, the former AD for Nuclear Tests, died Feb. 1 near his home in Los Osos. He was 80.

Goeckermann served as AD during the 1960s. He left in 1967 to take on a role as adviser to the Atomic Energy Commission.

Goeckermann was born and raised in Wisconsin and received his bachelor's degree in chemistry from the University of Wisconsin. He worked on the Manhattan Project out of the University of Chicago and Hanford from 1944-46. He received his Ph.D. in nuclear chemistry from UC Berkeley, where he worked with Glenn Seaborg.

Goeckermann came to Livermore to work at California Research and Development, which occupied the Lab site prior to the inception of the Laboratory. He joined the Lab in 1953.

Survivors include his wife Bernice, three children, John, Jim and Robert; two stepchildren, Delia and Charles; and one grandchild. His first wife, Dorothy, precedes him in death.

Services will be held at 3 p.m. Feb. 22 at 3 p.m. at Unitarian Universalist Fellowship, 232 Foothill Blvd., San Luis Obispo. Contributions may be made to a charity of choice.

Virginia Gregory

Services have been held for Lab retiree Virginia Gregory, who passed away on Jan. 21. She was 84.

Gregory started at the Lab in the Library and during the 10 years she worked at the Lab, she went back to school and became a technician, working in

Biology. She retired from the Lab in the 1970s.

Gregory had lived in Livermore since 1957. Her husband was a mechanical technician at Sandia National Laboratories.

Gregory, who was born in Belmore, NY, was an avid bridge player and was involved in volunteer work. She was a longtime member of the Cask and Mask Theater Group.

She is survived by daughters Patricia Campbell of Bellport, N.Y., Gayla Hurley of Ternopil, Ukraine; Denise Callaghan of Livermore; and Virginia Dwyer of Tucson, Ariz.; and five grandchildren, including Geoffrey Campbell, who works in the Lab in Materials Science & Technology Division. She was preceded in death by her husband.

Newsline

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Contacts:

Managing editor: Lynda Seaver, 3-3103

Contributing writers: Sheri Byrd, 2-2379; Don Johnston, 3-4902; Elizabeth Rajs, 4-5806; David Schwoegler, 2-6900; Anne Stark, 2-9799; Steve Wampler, 3-3107; Gordon Yano, 3-3117. For an extended list of Lab beats and contacts, see <http://www.llnl.gov/llnl/06news/NewsMedia/contact.html>

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1952 - 2002

MAKING HISTORY, MAKING A DIFFERENCE



The first contained underground nuclear test

This is an ongoing feature highlighting the Lab's 50-year history. This week we take a look at the year 1957.

On Sept. 19, 1957, the Laboratory detonated the first contained underground nuclear explosion, RAINIER, in a tunnel at the Nevada Test Site. The idea for carrying out such an explosion had been proposed early in 1956 by Dave Griggs, a geophysicist who greatly contributed to Edward Teller's effort to establish a second nuclear laboratory while serving as chief scientist of the Air Force, and by Teller. RAINIER gave a boost to the nascent Plowshare Program to explore the peaceful use of nuclear explosives. The test also affected the future of nuclear arms control and the conduct of nuclear tests.

The RAINIER event was announced in advance so that seismic stations throughout the United States and Canada could attempt to record a signal. Post-shot radiochemistry analysis of collected samples enabled scientists to develop the understanding of underground explosion phenomenology that persists essentially unaltered today. That information provided a basis for subsequent decisions in 1963 to agree to the Limited Test Ban Treaty, which banned atmospheric nuclear weapons tests; and established systems, including an international array of seismic detectors for monitoring nuclear test activities world-



Tunnels at the Nevada Test site were used to conduct contained underground nuclear tests, such as the RAINIER event in 1957.

Underground 1957 nuclear explosion

Around the world

- First UK H-bomb tested
- First USSR ICBM tested
- DEW line activated
- USSR launches Sputnik 1 and 2
- International Atomic Energy Agency created
- Killer bees spread north in the Americas from Brazil

Around the nation

- U.S. troops sent to Little Rock, Ark. to quell protests over desegregation
- Dr. Seuss publishes the "The Cat in the Hat"
- Berry Gordy founds Motown

- Boris Pasternak publishes "Dr. Zhivago"

Around the Lab

- Herbert F. York is Lab's director
- Lab population grows to about 2,500, adding employees to its Reactors' Program, along with its Magnetic Fusion and Nuclear Weapons, Research, Development and Testing Programs
- First atmospheric test (HOOD) at the Nevada Test Site takes place

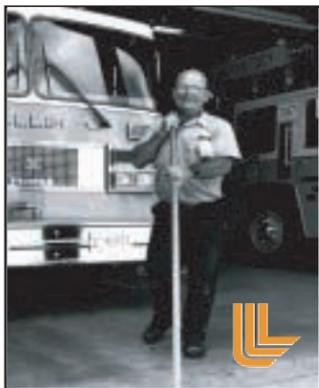
in other

NEWS

Significant events around the world, the nation and at the Lab.

See the Timeline: <http://www.llnl.gov/timeline/>

See anniversary stories: http://www-r.llnl.gov/50th_anniversary/history.htm



Deadline extended: March 1

Send your stories to Laurie Powers, L-664, powers12@llnl.gov. You may also submit stories on the Web at http://www.llnl.gov/50th_anniv/story.htm.

Send Us Your Story About Lab Life

Do you have an interesting story about "life at the Lab?" The 50th Anniversary Committee is gathering human-interest stories from employees, retirees and alums for "Fifty Years of Stories: Life at the Laboratory," a publication that will celebrate the people and experiences that have shaped Lab life.

Stories will either be included in the publication or posted on the 50th Anniversary Website.

Or, if you know an employee, retiree, or former employee who has an interesting story, we'd like to hear from them, too. **Also, if your family has three generations of Lab employees, be sure to contact us.**

When submitting your story, please include your name, job title, phone number and email address. Stories will be edited for length, grammar and punctuation, and fact-checked as necessary. Interviewers will be available if you are unable to write your story.

Questions? Call Laurie Powers, (925) 423-9868

Nominations in, counted for compiling Lab's list of 50 influential people

The nominations are in and the list of names is being sorted. For all of you who suggested who should be on the Lab's list of 50 influential people, thank you.

More than 150 employees submitted more than 150 nominees, ranging from the first corps of researcher to current employees.

The names are being turned over to an anniversary committee who will sort the data and come up with the final 50.



NEWS YOU CAN USE

BRIEFLY

Conference on nanotechnology, MEMS

The Lab will sponsor a one-day conference Thursday geared to present LLNL's programs and capabilities in nanotechnology, MEMS (micro-electrical mechanical systems) and microfluidics to the business, entrepreneur and investor community.

Featured technologies include: a handheld miniature gas detector; tools used to characterize biological cells for drug screening, drug delivery, and disease detection; miniature fuel cells for portable power for PDAs, lap tops, and cell phones; and miniature optical devices that could be used for optical network applications.

More than 85 corporate leaders, entrepreneurs and investors as well as Lab scientists specializing in microtechnology are expected to attend the event which will be held from 8:30 a.m.-6 p.m. in Bldg. 170.

The conference will showcase the Lab's

Microtechnology Center as a hub of experts with scientific knowledge in designing and building miniature devices. The conference serves as a networking session where private investors can mingle with Lab scientists. The meeting is co-hosted by NanoSIG, a Bay Area non-profit organization providing a forum for investors, companies, entrepreneurs and laboratories to make presentations, network and build business relationships.

Deadline to submit grand challenge ideas

Friday, Feb. 15, is the deadline for submitting a two-page description of preliminary Grand Challenge ideas to Rokaya Al-Ayat, director of the Laboratory Science and Technology Office (LSTO) L-003, alayat1@llnl.gov, 3-2810.

The Director's Office issued a memo from Jeff Wadsworth, deputy director for Science and Technology, on Jan. 8 to all Laboratory scientists

and engineers to submit ideas for a new research and development investment category — the Grand Challenge — that can address compelling national-level problems using a broad range of the Laboratory multidisciplinary expertise.

Recent events have highlighted the importance of our strategic investment approach to research and development (R&D) investments in addressing emerging national priorities. Many of the capabilities the NNSA Laboratories fielded in response to post-Sept. 11 events were the result of previous Laboratory Directed Research and Development (LDRD) Program investments. Continuing terrorist activities underscore the fact that the nation needs to invest now in the science and technology that can effectively anticipate emerging threats.

For a copy of the Call for Grand Challenge Ideas memo and guidance on submitting preliminary proposals, contact LSTO at 3-2810.

Technical Meeting Calendar

Friday
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INSTITUTE FOR GEOPHYSICS & PLANETARY PHYSICS

"Ultraluminous-Infrared Galaxies: Ellipticals and Quasars in Formation?" by

Linda Tacconi, Max-Planck-Institut. Noon, Bldg. 319, room 205 (badge required). Contacts: Wil van Breugel, 2-7195, or Josie Morgado, 4-5201.

DEFENSE & NUCLEAR TECHNOLOGIES

"Hard and Deeply Buried Targets Defeat: The Challenge Ahead," by Tony Lee, LLNL. 10:30 a.m., Bldg. 132 auditorium, room 1000 (cleared area). SRD presentation. Contact: Mark Herrmann, 2-6999.

Monday
11

UC DAVIS, DEPARTMENT OF APPLIED SCIENCE

"Impact of the Physical Layer Impairments on Optical Fiber Communication Systems," by

Helena Feng, UC Davis, Department of Applied Science. 4 p.m., Bldg. 661 (Hertz Hall), room 7 (open area). Refreshments served at 3:30 p.m. for a "meet the speaker" session before seminar. Contact: Estelle Miller, 2-9787.

PHYSICS & ADVANCED TECHNOLOGIES

"Numerical Methods for Solving the Diffusion Problem in Multi-Dimensional Hydrodynamic Codes", by Amikam Birnboim, Rafael Industries, Israel. 2:30 p.m. Bldg.123, Conference Room A (badge required).Contacts: Albert L. Osterheld, 3-7432, or Ida Hartman, 3-2655.

Tuesday
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MANUFACTURING & MATERIALS ENGINEERING DIVISION

"IRESS: The Integrated Reactive Sputtering Control System," by

William D. Sproul, Reactive Sputtering, Inc. (RSI).1:30 p.m., Bldg. 361 auditorium (uncleared area). Contact: David M. Sanders, 3-3436.

CHEMISTRY & MATERIALS SCIENCE

"Investigative Engineering Concerning Contamination and Compound Deformation in Two Filled Poly (tetrafluoroethylene) Composites," by Alfonso Lopez, EGC Corporations 2p.m., Bldg. 235, gold room (uncleared area). Contact: Bart Ebbinghaus, 2-8792, or Roberta Marino, 3-7865.

Wednesday
13

MATERIALS RESEARCH INSTITUTE SEMINAR

"Thermomechanical and Numerical Modeling of Energetic Materials and Multi-Material

Impact," by Jack Yoh, University of Illinois at Urbana-Champaign. 3:30 p.m. Bldg. 219, room 163 (badge required). Contact: Joanna Allen, 2-0620.

V DIVISION

"A Spheromak Formation Experiment with Application to Plasma Astrophysics," by Scott Hsu, Caltech. 10:30 a.m., Bldg. 219, room 163 (badge required). Contacts: Paul Springer, 3-9221, or Ida B. Hartman, 3-2655.

Friday
15

INSTITUTE FOR GEOPHYSICS & PLANETARY PHYSICS

"How does the SED of the Universe Evolve with Time: Pan-Chromatic Models of Galaxy

Formation," by Rachel Somerville, University of Michigan. Noon, Bldg. 319, room 205 (badge required). Contacts: Adam Stanford, 3-6013, or Josie Morgado, 4-5201.

MATERIALS SCIENCE & TECHNOLOGY

"Challenges in Demonstrating the Waste Package Performance Requirements at Yucca Mountain," by Dan McCright, 3:30 p.m., Bldg. 235, room 1090 (uncleared area). Coffee and cookies will be served at 3:20 p.m. Foreign nationals may attend if an appropriate security plan is on file. Contact: Thomas E. Felter, 2-8012.

Tuesday
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CHEMISTRY & MATERIALS SCIENCE

"Using XPS to Investigate Fiber-Matrix Chemical Interactions in Carbon-fiber-reinforced

Composites," by Cara Weitzsacker, Candescent Technologies Corp. 10a.m., Bldg. 235, gold room (uncleared area). Contacts: Art Nelson, 2-6488, or Roberta Marino, 3-7865.

PHYSICS & ADVANCED TECHNOLOGIES

"A Measurement of the B0 Oscillation Frequency using Full-Reconstructed Hadronic Decays at BaBar," by Benjamin Brau, Stanford University. 1:30, p.m. Bldg. 211, room 227 (badge required). Contacts: Doug Wright, 3-2347, or Pat Smith, 2-0920.

Friday
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PHYSICS & ADVANCED TECHNOLOGIES

"Search for CP Violation in tau lepton Decays," by Yurri

Maravin, Southern Methodist University, Texas. 2:30 p.m. Bldg. 211, room 227 (badge required). Contacts: Doug Wright, 3-2347, or Pat Smith, 2-0920.

INSTITUTE FOR GEOPHYSICS & PLANETARY PHYSICS

"The Formation and Evolution of Planetary Systems: Placing Our Solar System in Context with SIRTf," by Michael Meyer, University of Arizona. Noon, Bldg. 319, room 205. Contact: Adam Stanford, 3-6013, or Josie Morgado, 4-5201.

The deadline for the next Technical Meeting Calendar is noon, Wednesday.

Send your input to tmc-submit@llnl.gov. For information on electronic mail or the news-group llnl.meeting, contact the registrar at registrar@llnl.gov.

NEWS OF NOTE



VISA experiment opens door for linac completion

By Anne M. Stark

NEWSLINE STAFF WRITER

When complete, the linac-driven free electron laser (X-ray FEL) will be 10 billion times brighter than any existing light source.

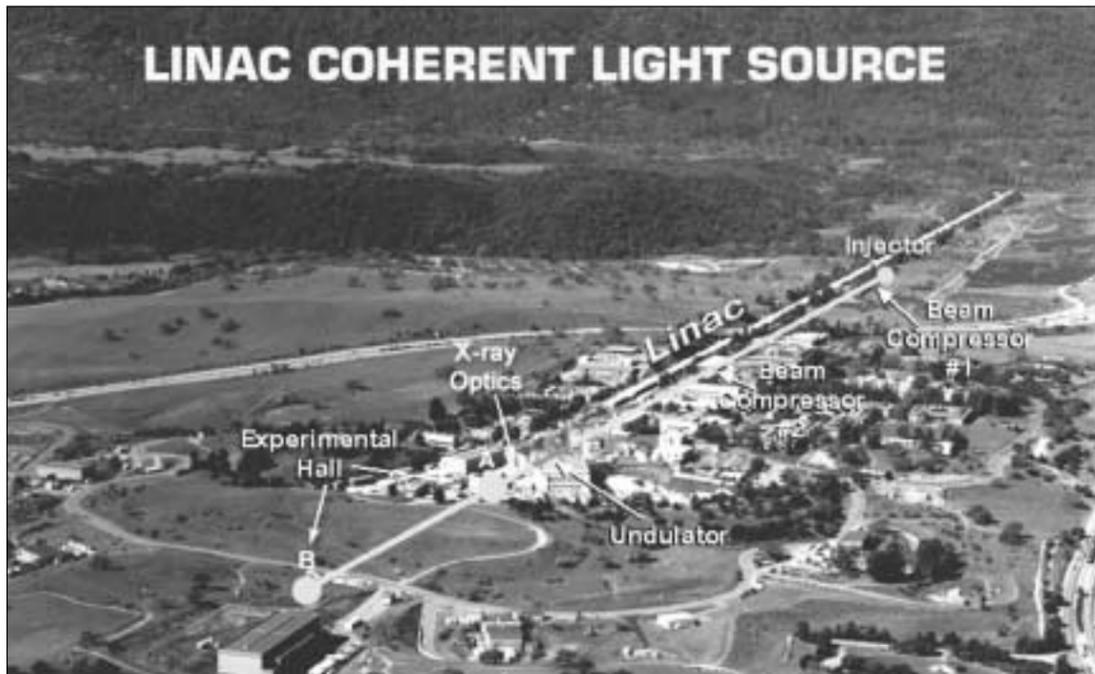
And what that light source will be used for is anything from simulating the density of large planets to obtaining an atomic scale resolution of a virus.

Lab scientists in conjunction with researchers from Stanford Linear Accelerator Center, UCLA and Argonne National Laboratory are working to get the revolutionary first-of-its-kind laser, called the Linac Coherent Light Source (LCLS), up and running by 2006.

A conceptual design for the project will be reviewed in April, according to Alan Wootton, a senior scientist in the Physics and Advanced Technologies Directorate.

Livermore is responsible for initial experimental requirements, design and layouts through DOE's Office of Basic Energy Science as well as the X-ray optics and diagnostics. SLAC will provide use of the accelerator while UCLA and Argonne will build the free-electron laser undulator, a system of magnets that makes the electrons oscillate perpendicular to the axis of the accelerator, so that they emit radiation.

"This is really a revolution," said Wootton, who has been working on the project for one year after a



A conceptual design for the Linac Coherent Light Source, located at Stanford, will be reviewed in April. Lab scientists collaborated with researchers from the Stanford Linear Accelerator Center, UCLA and Argonne to get the first-of-its kind laser up and running by 2006.

stint at the National Ignition Facility. "We are going to be able to understand how drugs work at an atomic level, how a virus is working at a very small scale and how proteins work."

The FEL is estimated to cost about \$200 million. Livermore has participated in the prototype optical experiment, called VISA, that helped validate the physics theory of self-amplified spontaneous emission, said Karl Van Bibber, PAT's chief scientist. Lab researchers designed the four-meter undulator for the

cal samples are viewed at third generation light sources, or at the electron microscope level. Then the samples must go through a complicated preparation, such as making crystals, before they can be studied. The research involved can take many years.

"We'll be taking 30 years down to 30 hours," Wootton said of the time it will take the LCLS to obtain an atomic scale resolution of a biological sample that currently can take many years to develop.

VISA experiment that served as a proof of principle test.

"It is very exciting," Van Bibber said. "Our Lab has been a charter member of the collaboration that has brought the LCLS from the conceptual stage, through the R&D phase and onwards to construction."

Construction is scheduled to begin in 2004.

Wootton said the LCLS would be used for a variety of experiments to explore warm dense matter, atomic physics and biological imaging.

A physicist by training, Wootton said the LCLS has extensive biological applications. He said scientists would be able to examine any biological samples at atomic scale resolution using the LCLS. Currently, biological

Computing's high-performance pathfinder, Compass Cluster, shuts down

By Don Johnston

NEWSLINE STAFF WRITER

The Compass Cluster computer system, which gave direction to the Laboratory's pioneering effort to make affordable high-performance computing available to the broader LLNL community of unclassified researchers, was shut down in a ceremony last week.

The system has been replaced by newer, more powerful unclassified systems made available to Lab researchers through Livermore Computing's Multi-programmatic and Institutional Computing initiative (M&IC).

Compass Cluster helped to inaugurate the M&IC initiative in 1996 to bring "tailored, cost effective" computing services to LLNL programs and scientists such as those working on Laboratory Directed Research and Development (LDRD) projects.

The initiative is called "multi-programmatic and institutional" because programs and directorates also have the opportunity to invest in these systems, and receive access for projects of their choosing, proportional to their investment.

"Compass Cluster was the sparkplug of



JULIE KORHUMMEL/NEWSLINE

Marc Stearman (left) and John Allen participated in a special ceremony to shut down the Lab's Compass Cluster, which once provided the direction for affordable high-performance computing.

institutional computing at the Lab," said Doug East, division leader for High Performance Systems in Livermore Computing. "The computing resources offered by Compass Cluster are modest by today's standards. But at the time, they represented a very significant unclassified computation resource to Lab programs and scientists."

The cluster consists of eight nodes, each with eight to 12 440 MHz processors and four to eight gigabytes of memory. The nodes were brought online between the fall of 1994 and November 1997 when Compass Cluster

reached its peak computational power of 70 gigaflops (70 billion floating operations per second).

In contrast, today researchers have access to systems such as the TC2K with a peak computational power of 683 gigaflops. M&IC also offers computer time on four other systems and has invested in the unclassified Accelerated Strategic Computing Initiative (ASCI) resources and the infrastructure they depend on. As a result, M&IC has allocations for computer time on these platforms.

Prior to the brief shutdown ceremony in Bldg. 117, Mike McCoy, deputy associate director for the Integrated Computing and Communications Department, lauded the partnership with Compaq that made the system possible and talked about the importance of Compass Cluster.

"This was the beginning of institutional computing at the Laboratory. This program has been really successful," said McCoy, who led the effort to create M&IC. "These computers are a piece of Lab history. For me, it is a sad moment to see them go."



CLASSIFIED ADS

See complete classified ad listings at
<https://www-ais.llnl.gov/newsline/ads/>

AUTOMOBILES

1988 Nissan Sentra, 117K mi., 4 speed, great commute car, excellent maintenance w/new tires, \$2,000 (925) 736-1383

1991 - Ford Probe, rebuilt transmission, 4 new tires, runs good, 122K miles, needs some body work \$1700 408-945-0250

2000 - Honda Civic VP. Only 4100 miles, auto, AC, Keyless entry, FM/CD. Excellent Cond. \$13,500 925-447-7751

1990 - Mazda MX6, loaded, only 63K miles, one owner, shiny penny condition \$5,000. approx 32 miles per gallon 925-735-6002

1994 - Pontiac Bonneville, 58kmiles, white, grey leather, V63.8, automatic, AC, cruisecontrol, power windows/seat/sterling, ABS, alloywheels, spoiler, \$6k 209-832-4731

1989 - Toyota Tercel- red, new brakes 8-01, new tires 7-00, CD player, very clean, 150 k miles, \$2000.00 925-426-8224

1985 - Chevy Suburban - started restoration. Moving & need to sell. Sacrifice at \$1,000. 925-447-5132

1965 - 1965 Falcon Ranchero 4-speed, 4BB, Delux Interior new. Call for more information. 925-455-8944

1998 - Plymouth Grand Voyager SE Minivan: 44k miles, fully loaded, maintained at dealer; excellent condition. \$14k. 925-447-7768

1992 - Honda Accord LX 2door coupe, 96k, AT, white. Excellent condition. \$6,050 925-961-1089

1991 - Bronco, Eddie Bauer. Excellent condition. 86k miles. \$6,200 obo 925-516-3768

1996 - Infiniti I30,V6 3.0L,auto,frontW/D,138k miles. excellent condition. A/C,PS,PV,PL, Tilt wheel,ABS, Moon Roof, premium sound cd/cassette.Dual/b. 209-839-8879

1989 - Chevy S-10 Blazer 4X4,120K miles,runs great, new alloy rims, tires, paint, \$1K in stereo equip. \$3900. 209-239-9267

1991 - Infinite, G20, excellent and dependable compact car, Very well taken care of, \$4,000.00. 925-449-7751

Sand Rail...very fast, blue, VW 2.0 liter engine,rear engine,New HD trans,2 seater,rear disc brakes,spun aluminum wheels \$4500.00 OBO 510-783-9923

1971 - Mustang Convertible.White top and exterior, green interior. seats in great condition.Original 302/V8. Magnum 500 wheels .132,000+ miles.\$7000 209-472-0162

1996 - Ford Explorer XLT, 5 Spd manual, 4WD, 54600 miles, Yakima sport racks, full mechanical check, excellent cond., \$11500/OBO 925-373-3340

1984 - Buick Riviera, Runs great, just smogged, 148K. \$400 /OBO 925-447-4126

1994 - Nissan Quest GXE, Diamond blue, 2nd row captains chairs, tow pkg w/hitch, great condition, 134K miles, \$6900. 925-735-0881

1992 - Ford Aerostar.\$3200.00 OBO 925-373-9540

AUTOMOBILE ACCESSORIES

ProComp Tires 305/70R-16 mounted on 16x8 Weld Outback wheels with center caps for new GM Truck. Less than 750 miles. Paid \$1,700, Asking \$1,250. 209-365-0412

15x7 MAG WHEELS, four bolt, from Ford, 1988 Mustang, fits others only \$60 for all 4 925-447-7070

15 inch Six bolt Pickup TRUCK WHEELS, steel, 2 for \$30 Livermore 925-447-7070

Car Seat, Century, Booster, harness for child 30-40 lbs., use without harness for larger child 40-80 lbs., arm rest, cup holder, excl. cond. \$20 925-443-3970

VW parts, 1963 transaxel swing axel \$50. 1973 transaxel IRS \$50, 1963 Front end and steering box \$70.00. Toe bar for type 1 beetle \$25.00. 925-846-2843

BICYCLES

Specialized Hardrock Mountain Bike. 20inch frame, 26inch wheel, Avocet seat. Great condition, hardly ridden. \$150 209-835-3352

5-speed Raleigh touring bike in excellent

shape. Model Sprite 27, for a woman. Great for collector. \$25 OBO. 925-686-2722

2 Peugeot P8 12-sp bikes. Excellent cond. Touring handlebars, 27-in wheels. One 23-in frame, one mixtie. \$60 each. 925-837-0421

Girl's bike, \$15. 925-454-0877

BOATS

1977- 19 ft Sea Ray bowrider in great condition! V8. I/O motors. 380 hrs. Bimini top. Seats 6-8. \$3,695/ob. 209-463-9900 to test drive! 209-832-2790

Sea-Doo 17.5 ft - 1999, , twin engines, 4 seater, bimini top, stereo, low hours, w/trailer. \$11,500.00 925-455-8108

1997 SKI BOAT, MB Sport, BOSS 210, 260 hours, 351cu in engine, drk grn w/gold, \$19,500.00 925-997-5549

MacGregor Sail Boat, 26 ft, galley slips 6 w/sm sink, 2 brnr alcohol stove, & portable toilet, Sail: main and Genoa, easy to trlr,\$6500 OBO. 209-881-0607

CAMERAS

Nikon CoolPix 990 Digital Camera, Like new, 3.4 MPixel. Includes large memory card, telephoto extender, rechargeable batteries. \$450 or offer 925-449-0947

Olympus E-10 digital accessory lenses: TCON300, TCON14B, WCON, MCON. Original packaging, warranties, receipts. Like new. Half price. 510-226-7440

ELECTRONIC EQUIPMENT

Brand new HP Scan Jet 5300SE, \$150. Also HP 855C Color printer, \$35 works great. Will deliver to Lab. 925-449-4946

UMAX flatbed scanner to PC or Mac, \$100. Canon copier, \$100. Apple laser printer 4/600, \$25. 925-784-8934

17 inch monitor, viewmate, 1 year old w/manual. \$50. 925-443-2856

Minolta Scan Dual-35 mm slide/film scanner 2400 dpi, Mac/PC compatible, SCSI interface only, Photoshop 4.0 LE, manuals, cables, \$200. 925-447-5329

Macintosh 2SI with extra external hard drive, monitor, external CD ROM, StyleWriter 1200 printer, all accessories and manuals. \$50 OBO 925-371-0558

PC 16MB memory, 120 MHz with 14 inch monitor like new \$100, Pioneer dual tape deck for stereo system \$40 925-484-9028

GIVEAWAY

27-inch Sony XBR TV. Tube fine. Tuner sometimes erratic. 510-489-0906

Dark oak table with 4 bruer style chairs. 30 inches x 60 inches. 925-447-2224

Free standing dishwasher and dryer. Both work well. Free to a good home. 925-449-3663

Free 32inch Television stand. Came with new TV from Sears. Assembled and used for 30 days. Like new, pickup in Livermore. 925-292-8762

Beautiful,friendly 8 year old grey cat in excellent health. We have an allergy problem. Will provide child support! 650-838-9451

HOUSEHOLD

Whirlpool washer/electric dryer, white, good condition, \$100/each. Call after 6:00 pm. 209-550-0609

OAK King size water bedframe with bookcase headboard and many under bed drawers. Suitable for king mattress. \$40 OBO, 925-455-1392

Howard-Miller Grandfather clock. The Esquire Model. One of first made. Excellent condition. \$1400. After 7 pm or leave msg. 209-954-9853

Oak & Glass entertainment/display open shelf unit. 76inches high, 48inches wide, 17.5inches deep. \$100 or B.O Like new. 2 ea oak end tables \$50 ea. 209-835-3352

Invacare/Mobility Hospital bed. Electric controls head and foot. Best offer 925-447-7751

Sofa, 8 feet long, blue/green, \$200 925-449-6923

Aggregate for exposed concrete patio or walkways. Red River stone 3/8 inch and

gold/white 3/4 inch. Five cents per pound. 925-447-6670

Hotpoint S/S refrigerator. white, ice/water in door, 23.6 cu. ft. \$250 209-815-8550

Brass headboard and footboard for queen size bed. Make an offer. 925-426-0069

Maytag Washer & Dryer (White). Dryer belts six months new. Good condition/extra set. Sell as set. \$250/OBO. 925-462-6503

Computer workstation unit. U-shaped 7ft wide, 6ft long; detachable bookshelf. Light gray speckle top, dark gray bottom. Like new. \$150/OBO. 925-443-7901

Freezer, upright. Works well, \$75.00 925-625-0520

Antique oak dining room set, table 48X48, six chairs, three leaves, scrolled legs with ball feet. \$500.00 925-449-9038

Coffee table with beveled edge glass top & modern brass base. Round, approximately 46 inches in diameter. Originally paid \$535, sell for \$150. 925-447-2224

Black leather recliner with built in massage and heater (\$100), black home entertainment center(\$50), computer desk (\$30), call evenings 925-443-8581

Cherry wood dining table with two leafs and six chairs. \$500.00 209-832-7074

Whirlpool Dishwasher. Works well. About 8 years old. Has colored pannels to change color to tan, sand, white or black. Only \$50. You pick up. 925-552-0282

Light oak 3 piece bedroom set: 12 Drawer dresser, 5 drawer chest, and 2 drawer nightstand. Like new. Solid wood. \$800 Call for more details. 925-443-4778

Hunter green sofa; pillow-top ultra soft fabric. Very comfortable and attractive. Only 2 years old with Scotch Guard protection. \$350 OBO 925-455-4208

China hutch, medium oak, excell cond \$699 obo 925-443-7543

King size bed with box spring and metal frame. In good condition. \$200.00 510-792-1538

BEAUTIFUL CHERRYWOOD SLEIGH BED queen size just bought 3 months ago,paid \$650 sell for \$500/o will deliver and set up locally 925-371-1551

LOST & FOUND

Found: a set of keys that was have turned into LLNL lost and found (4-4166). 2 car and 1 house key. One car key says for Nissan. Also includes electronic car door opener and 101.7 KKIQ mini-flashlight.

MISCELLANEOUS

LL Bean Wellington style waterproof boots. Fits Men size 12. Best offer 925-447-4457

Lapidary equipment Professional carbochon shaping and polishing machine with 6 inch diamond wheels and pads. Like new cost \$716, sell \$450 925-447-6670

Giants Tickets : Four seats sec. 122 lower box \$28.00 ea. 925-679-1612

Wedding Gown, Georgeous Demetrious, tons of beading, off shoulder, beaded train, sz 5-6. \$125. 925-828-3295

Snap-on 3 ft ratchet 3/4 inch drive w/ 14 inch extension. \$100, 209-830-1380

Designer bricks,Spectrum, approximately 250 \$60. Pile of river rocks large \$15 925-371-1465

MOTORCYCLES

2000 - Yamaha YZ426 Street legal, Runs great. Good condition, E-Line Coil, Baja Designs, Extras, \$5,000 209-833-3785

1991 - Yamaha V-Max, Excellent Condition, Adult Owned, Garage Stored: \$4,500 209-814-1322

Cobra Boulevard pipes for 1996 Honda Shadow motorcycle. Like new. Make offer. 925-829-2581

MUSIC INSTRUMENTS

Snare drums. pearl brand, 5.5x13,brass, black powder coated, \$175 Mapex, maple, 5.5x14 midnight black, with stand ,in box \$175 925-243-1373

Lowrey L-2 keyboard organ, \$150; Lowrey L-10 organ with pedals, bench and amplifier, \$200. Call after 6:00 pm 209-550-0609

Kimball Spinet Organ, Swinger 700, \$250 925-449-6923

PETS & SUPPLIES

UMBRELLA COCKATOO friendly, tame, needs a new home,preferably with other feathered friends! Comes with 2 cages, toys, food. \$1000. 510-834-6405

Akita Puppies, Health guarantees, 4 boys 1 girl. Champion lines. Avail. Feb 9th. \$500.00, Show kennel- 925-449-5626

White dwarf bunny, with cage and toys. \$30 209-833-6443

Corgie mix, red long hair female dog, approximately 2 yrs old, moving unable to keep, free to good home 925-373-3845

50 gallon plexiglass terrarium. Good for reptiles. Includes overhead florescent light. \$15. 925-443-4778

RECREATION EQUIPMENT

Stair Stepper w/electronic counters \$25.00 925-449-1481

SKIS- Rossignol S3 185 with bindings, Rossignol Quantum Poles, Salomon SX92 boots sz 12. Over \$250 value, \$100 takes all. 209-830-1380

Pro lat pull down bar. heavy duty,like new condition. \$20. 925-243-1373

HOME GYM - Prism 5600 by Formula. 13 workout activities, 3ft x 7ft x 7.5ft, in excellent condition. \$75 OBO. 510-538-8732

Ski jacket and 2 matching pants made by Body Glove, girls size 14/16 like new. \$45.00 Morrow Snowboard, no bindings 158cm \$35.00 925-634-0423

Snowboard: Burton Rippey 158 cm, Burton SI Bindings, Burton Leather Boots (size 9), padded board bag. All like new - \$350 obo 925-249-1640

Treadmill - WalkFit - made by Nordic Track. \$150 925-447-3203

Skis, cross country. Fisher Touring Crown 210 w/NNN bindings. Rossignol Advantage boots size 44. Very good condition. \$115. 510-483-8894

RIDESHARING

Express your commute, call 2-RIDE for more information or visit <http://www-r.llnl.gov/tsmp>.

PATTERSON - Vanpool has seats available. Work hours 7:30-4:00. Call 209-892-2118, ext. 2-9502

DANVILLE - Camino Tassajara & Crew canyon (near Blackhawk) - 2 drivers/riders seeking additional members to carpool from south Danville area. 8:00 - 4:45 925-736-9441, ext. 2-1039

Orinda-Moraga-Lafayette - Lamorinda carpool needs 4th rider/driver. Lab hours 8:15am-5pm. Departs/returns to St. Stephens and Highway 24 in Orinda. 925-253-0498, ext. 2-9823

SERVICES

PAINTING - Interiors, exteriors, commercial & residential. Free estimates (925)787-0356.

Tree Services: trimming, removal, stump grinding. Call for estimate. 925-449-2082

FLOORING - Carpet, linoleum, wood laminates, hardwood. Reasonable rates, reliable, 27 years in business. Licensed/bonded/insured. 925-516-9510

CoDA Codependents Anonymous - Meets Tuesday Noon B571/R2016. 12 Steps Support BETTER RELATIONSHIPS! Just come or Info 925-447-7070

House Painting - Exterior and Interior. Over 16 yrs exp. Free estimates. 925-447-5132

If you or your children need help to learn french, I can give classes at any level. 925-518-5523

SHARED HOUSING

Roommates Needed : Newer Home Vasco\580 Livermore, \$700 month plus 1\3 utilities Fem. Pref. Avail. March 1st. 925-899-2766

Tracy - Bedroom for rent in beautiful home w/ pool. Full privileges, cable included. \$500 + 1/3 util. 209-833-6443

Livermore - room in 3bd/3ba home 3

miles from LLNL great location, full privileges computer hook-up NP \$550 + 1/3 utilities 925-606-9558

Livermore - Furnished room for rent. Good neighborhood. \$460/mo. Utilities included. Smoker okay. 925-447-6218

Livermore - Wanted - Livermore room for rent, Mon-Thurs, private bathroom, smoke-free, pet-free environment, quiet hours 9:30pm-6am. 415-482-6685

TRUCKS & TRAILERS

1990 - Ford F-250 XLT Lariat, AT, Extended cab, 2WD, recent tires & shocks etc, 7.3 diesel, Rebuilt trans, many extras, runs good. \$6250 OBO. 209-946-0645

1998 - Dodge 1500 Quad Cab Sport, 5.9l, dual air bags, tilt wheel, CC, AC, pwr doors/windows, 59k mi, \$15,000 925-240-6237

1997 - Dodge 1500 extra cab short bed 4x4 auto new tires new trans.power window,locks cruise tilt ac am fm cas. mag v-8 tow pack.\$17000 925-606-1972

2000 - Chev S-10 Extreme Package, V-6, 33k Mi, Warrant, White/Ext, Grey/Interior, Pwr Steering, Brakes, Bedrug, Bed Cover, New Goodyear Tires. \$17k. 925-846-5918

1997 - Chevrolet Silverado pickup, extended cab, 3rd door, 34,000 miles, \$16,000/obo 925-449-6923

1997 - Ford F150 X-Cab Black XLT lowered 105 K miles. Towing pkg. Fully loaded, V8, All power, cd changer Asking \$12,800.obo. 209-823-6639

1997 - Ford Ranger XLT Super Cab, 4L V6, 5 sp man, Rhino Liner, Roll-A-Long bed cover, 45K miles, \$9800, 925-455-0836

1991 - Ford Explorer XLT 4x4.130K mi,Silver/Black,SecuritySystem,A/T,A/C,PwrSteer,PwrWin,MoonRoof,AM/FM/Cassette . \$5200/obo 925-447-0083

1970 - Ideal Travel Trailer, 20 ft. Everything compact and useful! Everything works and is in very good condition. Clean and well kept. Asking \$1,700. 209-835-5802

VACATION RENTALS

Garden City, Utah - Condo, Bear Lake Resort, sleeps 6, available 2/18-2/25/02. Reasonable rate. 510-581-5228

Kailua-Kona - 2BR/2BA condo, ocean view, pools, and LLNL rates. 925-833-6061

SOUTH LAKE TAHOE - 3 Bedroom 2 bath Chalet, newly remodeled, nicely furnished,all amenities,close to all skiing, Reserve Now! 209-599-4644

Maui, HI - Kahana Reef oceanfront 1BR/1BA condominium. Beautiful two-island view, oceanside pool, and BBQs. Low LLNL rates for year-round reservations. 925-449-0761

WANTED

Mantis tiller. Do you have a Mantis tiller that is gathering dust in your gardening shed. Let me take if off your hands and start my gardening. 925-456-5874

To rent or buy cardboard cutouts of hollywood stars for 8th grade graduation dance. 209-403-4942

Need Camper Shell in good condition that would fit a 1992 Ford Ranger. 925-449-1771

Sterling silverware, Classic Rose pattern by Reed and Barton 925-447-1023

Set of Honda Hubcaps size 14 or Mag wheels at reasonable price 209-531-1527

WANTED: Old stereos, speakers, amps, vacuum tubes, musical equip. working or not. 925-443-2954

Portable phonograph to play my old records. 925-447-7768

Looking for a high quality turntable in good condition. 925-292-1976

Starting new family - need good condition glider rocker with ottoman and bassinets. Will pay reasonable price. 209-833-0834

Experienced women softball players. Thursday nights - Livermore. We play to win but have fun. If interested, call. 925-846-1169

Diversity series looks at issues of healing, intolerance

Noted author and speaker Bebe Moore Campbell will be speaking to Lab employees on issues of healing and intolerance as part of the Diversity Speaker Series. The talk takes place Feb. 20, 11 a.m.-noon in the Bldg. 543 auditorium, and is co-sponsored by the Association of Black Laboratory Employees and the LLNL Women's Association in celebration of February as Black History Month.

The *Washington Post* called Campbell "one of the most important African American writers of this century." She is a recipient of the National Endowment for the Arts literature grant and is the author of two New York Times bestsellers, "Brothers and Sisters," and the more recent "Singing in the Comeback Choir." Campbell's other works include the novel, "Your Blues Ain't Like Mine," for which she won an NAACP Image Award; her memoir, "Sweet Summer;" "Growing Up With and Without My Dad;" and her first book, "Successful Women, Angry Men: Backlash in the Two-Career Marriage."

Campbell's most recent novel is "What



You Owe Me."

As a journalist, Campbell has written articles for the *New York Times*, the *Washington Post*, *The Los Angeles Times*, *Essence*, *Ebony*, and *Black Enterprise*, as well as other publications. She is a regular commentator for National Public Radio's "Morning Edition."

Campbell was born and raised in Philadelphia. She received a bachelor's degree in elementary education from the University of Pittsburgh and taught elementary and middle school for five years.

A book signing will follow Campbell's talk. Books are available at the LLESA office in Bldg. 415.

Author and educator Bebe Moore Campbell will speak to Lab employees on issues of healing and intolerance, followed by a book-signing session.

Black History Month continues with special video presentations

In celebration of Black History Month, LLNL and Sandia employees can enjoy luncheons, videotapes with discussions, live informative historical speakers, as well as top-notch entertainers.

The schedule of events is as follows:

- Feb. 12 — Videotape presentation, "Black Aviators: Flying Free," LLNL Bldg. 571, room 2301, noon-1 p.m.
- Feb. 13, 20, 27 — "Who Wants to Be a Millionaire?" Sandia Bldg. 904 auditorium, noon-1 p.m. Six to eight volunteers will be selected to participate.
- Feb. 15 — Social lunch, LLNL South Café, noon-1 p.m.
- Feb. 11 — Speaker Ken Washington, director of

the Sandia Distributed Information Center, on "Tools for a Successful 21st Century Career," Sandia Bldg. 940 auditorium, refreshments served, noon-1 p.m.

- Feb. 14 — Speaker, Lionel Lyons, "Dreams & Dream-Makers," Sandia Bldg. 940 auditorium, refreshments served, noon-1 p.m.
- Feb. 18 — Videotape, "Ships of Slaves: The Middle Passage," LLNL Bldg. 571, room 2301, noon-1 p.m. Produced by Steven Spielberg's DreamWorks.
- Feb. 19 — Videotape, "The Night Tulsa Burned," Sandia Bldg. 911, room 103, refreshments served, noon-1 p.m.
- Feb. 20 — Speaker Bebe Moore Campbell, "Issues of Healing and Intolerance," LLNL Bldg. 543 auditorium, 11 a.m.-noon. Book signing to follow.

- Feb. 21 — Music and display, "African-American History — From Before Slavery to Present Times," Asale Kimbaada, Sandia Bldg. 904 auditorium, refreshments served, noon-1 p.m. Rhonda Ferguson and Ed Allen will entertain through their music.
- Feb. 22 — Health information session, "Health Concerns for African-Americans." Kerwin Falls, LLNL, Bldg. 361 auditorium, noon-1 p.m.
- Feb. 25, 26 — Videotape, "John Henry Clark Expedition," parts 1 & 2, LLNL Bldg. 571, room 2301, noon-1 p.m.
- Feb. 28 — "Soul Smacking Productions," Teirrah McNair, Sandia Bldg. 904 auditorium, refreshments served, noon-1 p.m.

Update on defense technology



FRANK NUNEZ/TID

Air Force Lt. Gen. Ronald Kadish, right, came to the Lab last week for updates on the Lab's various defense technologies. Arno Ledebuhr (left) and Physics AD Bill Goldstein provided information on the Advanced Interceptor Technology and other programs.

BUDGET

Continued from page 1

said. "It is important to remember that the budget rollout is just the start of a lengthy process. The budget figures for the Laboratory are preliminary, very high level and, consequently, may not be complete. It will be many months before we have a clear picture of what the FY 2003 budget will look like."

Some funding priorities for the FY2003 budget highlights are as follows:

NNSA \$8 billion for FY2003

The total funding for NNSA is \$8 billion. This is a 5.7 percent increase over the FY2002 appropriations. Included in that appropriation is \$358 million for activities in response to the Sept. 11 events. Within the FY2003 total, funding is provided to continue and expand activities to respond to the rapidly changing security environment. The budget requests \$510 million for the physical and cyber security activities at the laboratories, plants and Nevada Test Site.

The FY2003 Defense Nuclear Nonproliferation request of \$1.1 billion, is \$87 million over the FY2002 appropriations. Included in that appropriation is an additional \$223 million for activities related to the war on terrorism.

Directed Stockpile Work and Campaigns budget totals \$3.3 billion. This funding will support the mainte-

nance and evaluation of the existing stockpile and weapons refurbishment programs as well as fund 15 scientific, engineering and readiness campaigns to develop new capabilities to assess weapon status, extend weapon life and certify the reliability of the stockpile.

Office of Science — \$3.3 billion

The request for the Office of Science will support increased funding for operations and instrumentation at Office of Science user facilities, used by over 18,000 university, industry and government researchers. The request also provides:

- Funding to keep the construction of the Spallation Neutron Source on schedule;
- Increases in research, including nanoscience research to understand how to "tailor" materials for specific uses;
- Climate change research, including a new Climate Change Research Initiative, the Human Genome and Genomes to Life programs, and scientific discovery through advanced computing,
- Supercomputer research and development to harness the full capability of modern supercomputers to solve scientific problems; and
- Funds to counter the infrastructure deterioration at Office of Science laboratories.

Newsline will provide additional FY2003 budget information as it becomes available. The entire FY 2003 budget can be accessed via the Internet at <http://www.mbe.doe.gov/budget/03budget/index.htm>.

BASIS*Continued from page 1*

is a partnership that includes public health and law enforcement agencies.

"A strength of this program is that we work with the people on the ground," Davidson said. "This allows feedback from responders to flow back into the program and guide future research."

BASIS has undergone extensive, real-world testing in urban environments.

While no specific threats have been received for the Salt Lake City Olympic Games, according to law enforcement officials, BASIS has been deployed for use as part of the overall security for the event.

During preparations for the Olympic Games, Livermore and Los Alamos researchers worked closely with Utah Department of Health officials. "It's been a very good relationship," Imbro said.

In developing BASIS, Los Alamos scientists developed the system's aerosol collection units, the system's command and control software and sample handling procedures for outside the field laboratory.

For their part, Livermore scientists were responsible for the BASIS biotest equipment and DNA

analysis procedures, as well as the system's communications capability.

About 30 Livermore biomedical researchers, computer scientists and engineers have worked on the BASIS project during the past three years. At Los Alamos, about 10 staffers have been involved in the project. This work builds upon many years of research in the biological sciences at Los Alamos and Livermore, including the well-known work on the Human Genome Project.

BASIS represents one system among a suite of bio-detection technologies under development at LLNL. One instrument, the Handheld Advanced Nucleic Acid Analyzer, or HANAA, is a portable machine that can be used to identify pathogens based on their DNA, with results reported in about 30 minutes. This technology is in the process of being licensed to Baltimore-based Environmental Technologies Group, which expects to have commercial units available this year.

A second instrument, an automated version of BASIS, is under development and has been dubbed the Autonomous Pathogen Detection System. This is a continuous and fully automated monitoring system that functions like a biological smoke detector. It will

be able to detect and identify as many as 100 different types of potentially harmful organisms that may be in the air. This systems is now in a prototype stage of development and demonstration.

At Los Alamos, other technologies in development include the National Infrastructure Simulation and Analysis Center, NISAC, a powerful new decision support system for government and industry decision-makers in the areas of crisis response, infrastructure policy, planning and investment. NISAC uses the nation's largest scientific computational capabilities to discover previously unknown relationships and develop insights about infrastructure vulnerabilities to feasible terrorist threats.

Las Alamos also has developed a new approach for neutralizing deadly toxins released by pathogenic bacteria, such as those that cause anthrax and plague. The researchers have designed and laboratory-tested a decoy molecule, or receptor-mimicking molecule, that stops the spread of the bacteria's toxin by preferentially binding the toxin, thus keeping it from binding to the immune system's cells.

BIATHLON*Continued from page 1*

McCandless will count penalty laps that racers must ski corresponding to the number of targets missed, and Farrell will help collect shooting scores for the scoring booth.

"Most of the scoring is done electronically, but they need people to double check," Farrell said. "The manual counting is done in case the electronics fail or a scoring dispute arises."

McCandless and Farrell have been enlisted to officiate all the biathlon races, though McCandless will not work one race because there are no penalty laps.

"The average racer will finish the event in about an hour," McCandless explained. "However, because athletes start every 30 seconds, the whole event can take over three hours to complete." McCandless also pointed out that there are some events that start large groups of athletes together, but for the most part, the shooting ranges are not set up to accommodate the large numbers.

"The pursuit races, where athletes all begin at once, tend to get hectic," he said. "But most of the events are staggered starts, so it's not so bad."

The couple first became interested in the sport about 10 years ago. McCandless is a gunsmith by training, and was looking for a way to "stay in shape" when he discovered the biathlon. Farrell began participating shortly after she met McCandless.

"I love all sports, but skiing in particular," she

said. "I'm not particularly fond of guns, but the biathlon is a lot of fun and a challenge."

The two attend as many events as they can in Northern California, but like to keep their participation recreational. In the summer, they participate in "summer biathlon" competitions, which replace the skiing with running over varying terrain.

"There are usually only one or two races a year in the area, so they're few and far between," Farrell explained. "There are a few races in Idaho, Montana, but we don't take it so seriously that we travel out of the area."

Olympic hopefuls travel to almost every race in North America, however, and recreational biathletes compete alongside the serious racers because there are so few events. This is how McCandless and Farrell found themselves offered a position in Salt Lake City.

"The community is very small," McCandless said. "That's how we found ourselves in a position to submit our names, and that's how we were eventually chosen to help out."

Though the Salt Lake Olympic Committee does not provide housing or a stipend — officials are volunteers — McCandless and Farrell will get to keep their officiating uniforms. In addition, they receive passes to see medal ceremonies and a rehearsal of the opening ceremonies.

"There are always a bunch of people trying to sell tickets at the venues," McCandless said. "I'm just excited to see the athletes in action."

The 2002 Winter Olympics begin today, and the biathlon competition kicks off on Monday. For more

information on the Salt Lake City Olympics or American biathletes, go to <http://www.saltlake2002.com>.

BIODETECTION*Continued from page 1*

The new laboratories would be designed to operate as a biosafety level three facility. LLNL has operated biosafety level one and two facilities on site for many years. Adding more labs would allow Lab scientists to build upon existing DNA signature work for anthrax and plague, as well as the study of additional bioagents such as Valley Fever and Tularemia.

The need for increased biotest capabilities is a result of the terrorist attacks of Sept. 11. DNA signature work has led to Lab technologies such as the Handheld Advanced Nuclei Acid Analyzer (HANAA) and the Autonomous Pathogen Detection System (APDS), both of which can be used to rapidly and accurately test for various airborne pathogens. The expanded facilities would not only allow Lab researchers to continue their work with DNA signatures, but to more accurately test engineering prototypes such as APDS and HANAA.

The project team is still exploring a number of design ideas — including the remodel of current labs or a new building. It is thought that the new facility would be approximately 1,000 square feet and contain three laboratories.



Goodwin makes good on HOME celebration ride

Defense and Nuclear Technologies AD Bruce Goodwin made good on his promise last week to do something "out of character" if his directorate employees turned in a strong showing at the recent HOME Campaign. Goodwin challenged employees to come up with a 100 percent response to their HOME Campaign pledge packets. The result was a 14 percent jump in campaign contributions, at 61 percent, making the directorate one of the highest contributors in the \$1.31 million campaign. Goodwin donned a short sequin skirt, flashing clown nose and beanie, complete with propeller, for a scooter ride around Bldg. 132 and the Director's Office.

JULIE KORHUMMEL/NEWSLINE



Newsline
UC-LLNL
PO Box 808, L-797
Livermore, CA 94551-0808